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**Oh et al.**

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(54) **METHOD AND APPARATUS FOR PROVIDING A WIDGET**

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**G06F 3/0481** (2013.01)

(52) **U.S. Cl.**  
CPC ..... **G06F 3/0481** (2013.01); **G09G 2340/14** (2013.01)

(58) **Field of Classification Search**  
CPC .... G06F 3/048; G06F 3/04817; G06F 3/0481  
USPC ..... 715/804  
See application file for complete search history.

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(57) **ABSTRACT**

A method of providing a widget includes displaying a first widget indicating time, and displaying first information indicating an attribute of a second widget and second information specifying the first information based on a user's selection on the first widget. The second widget includes the first information and the second information.

**9 Claims, 8 Drawing Sheets**

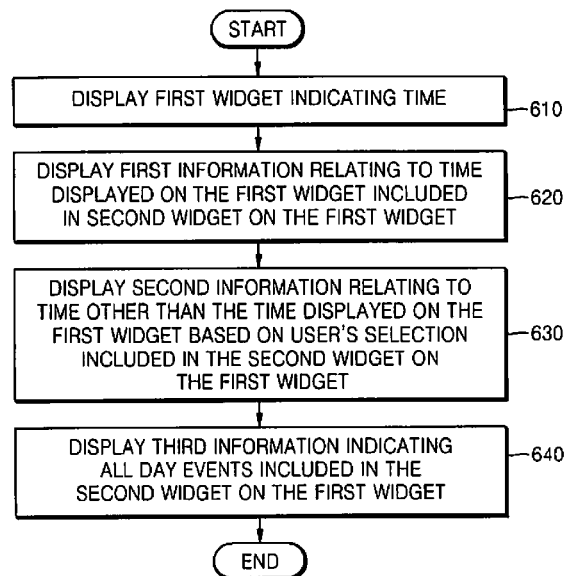


FIG. 1

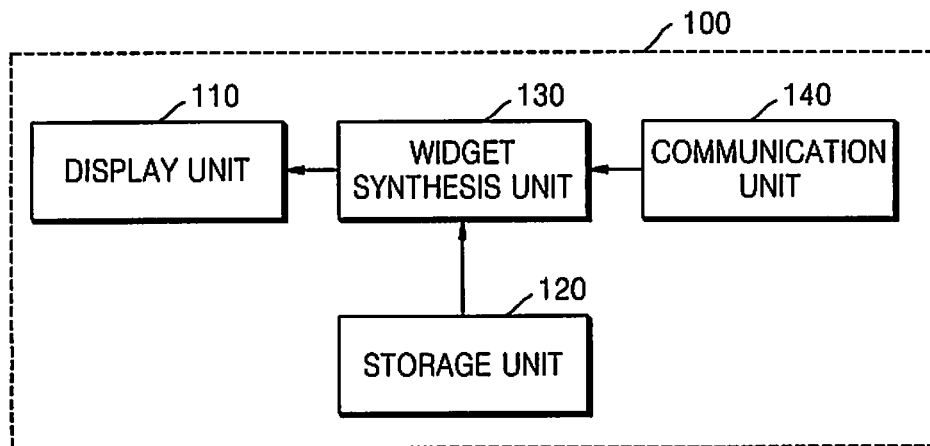


FIG. 2A

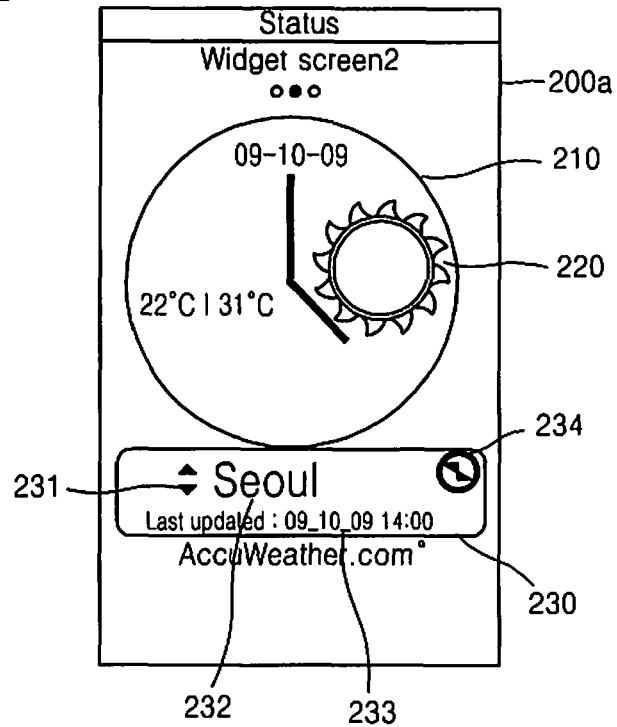


FIG. 2B

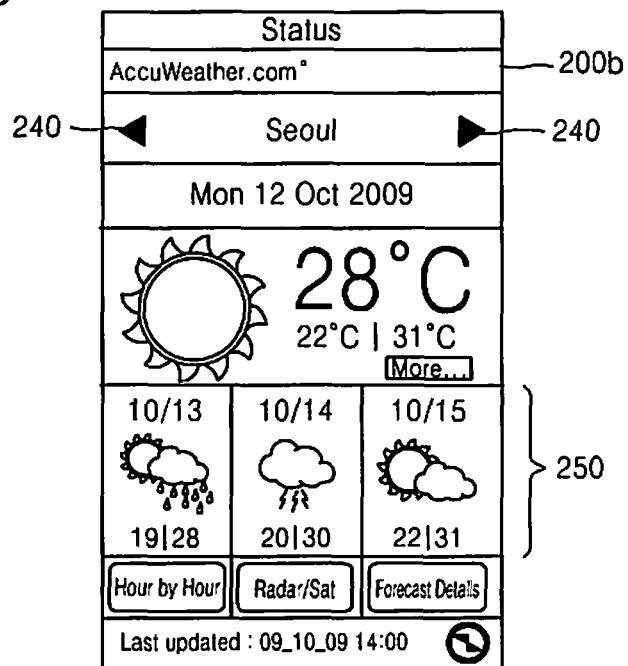


FIG. 2C

Status	
City List	
Hong Kong	
Seoul	✓
Busan	
New York	
Addington	
Euilly-Et-Lombut	

FIG. 2D

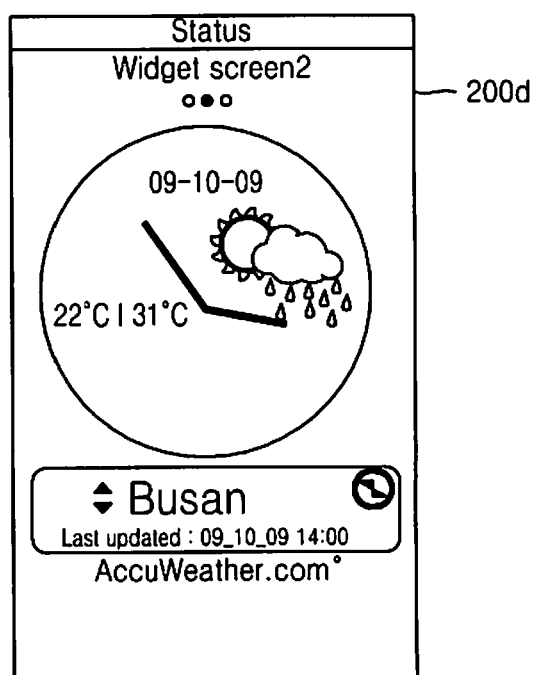


FIG. 3A

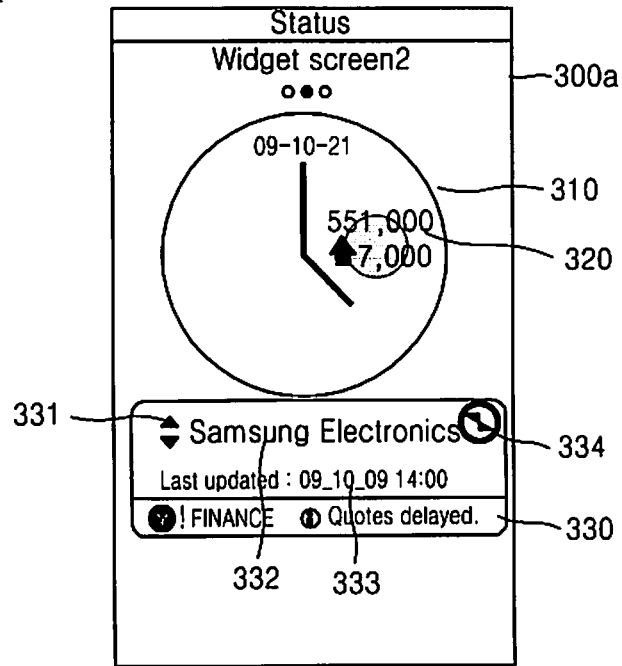


FIG. 3B

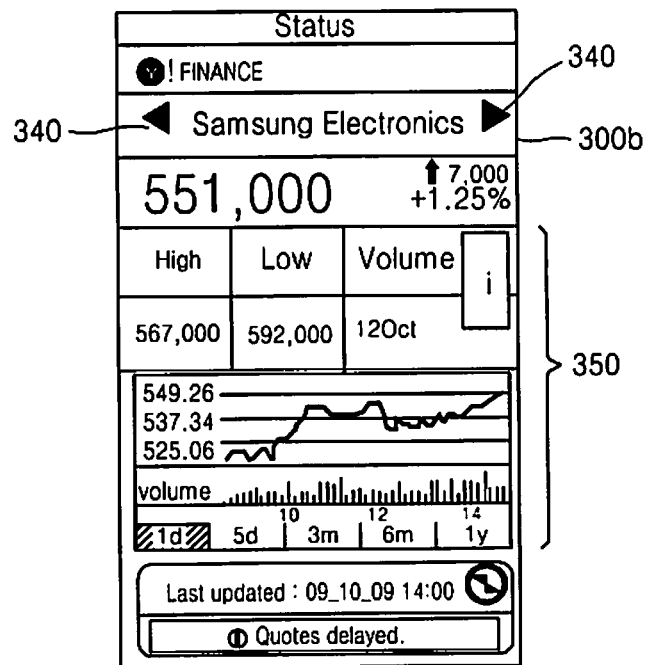


FIG. 3C

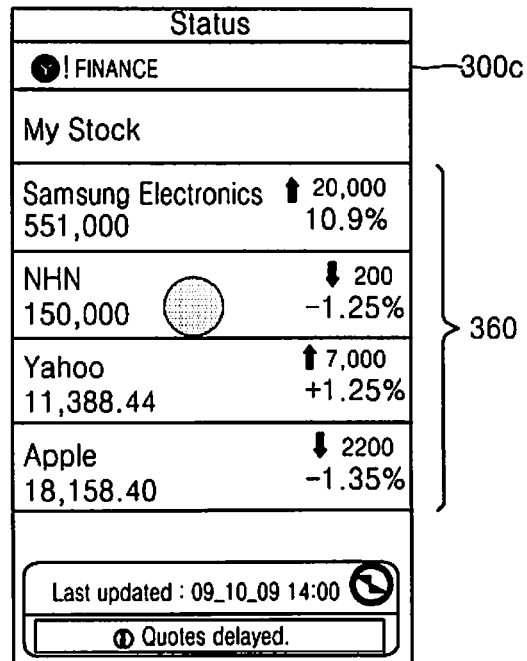


FIG. 3D

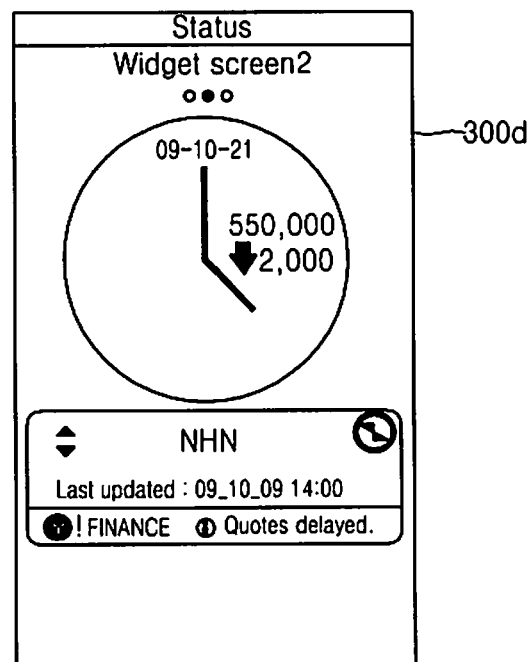


FIG. 4A

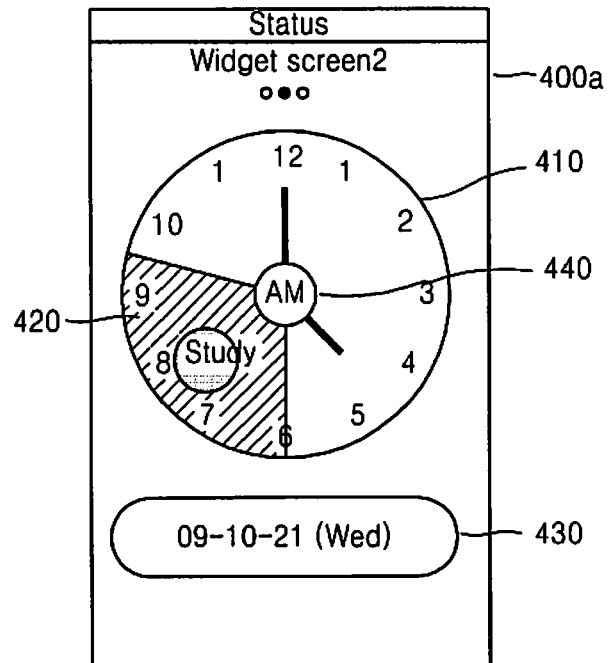


FIG. 4B

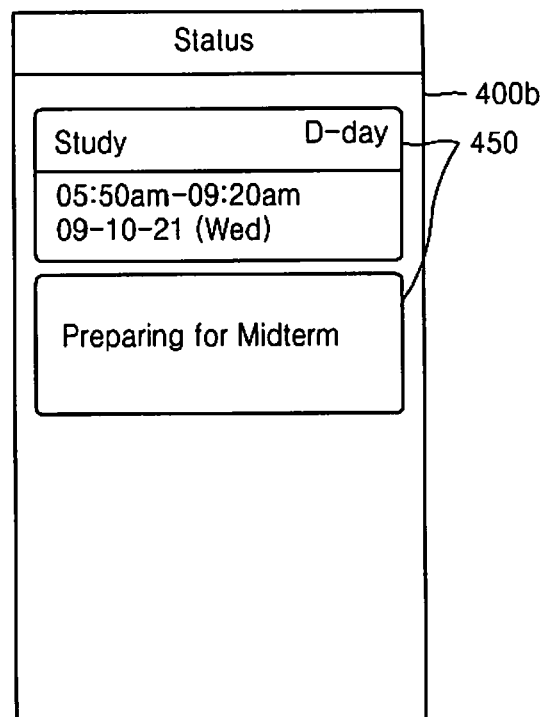


FIG. 4C

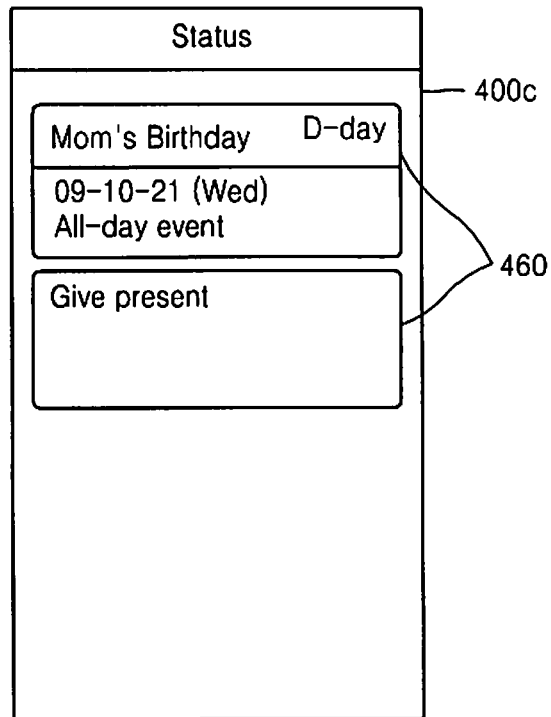


FIG. 4D

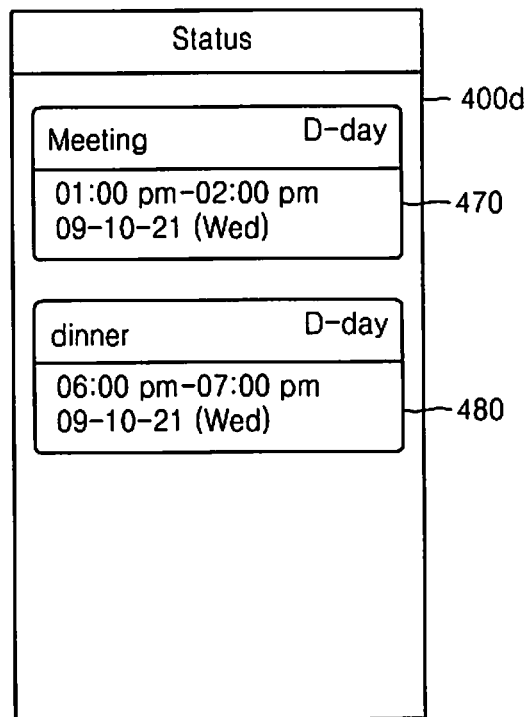




FIG. 5

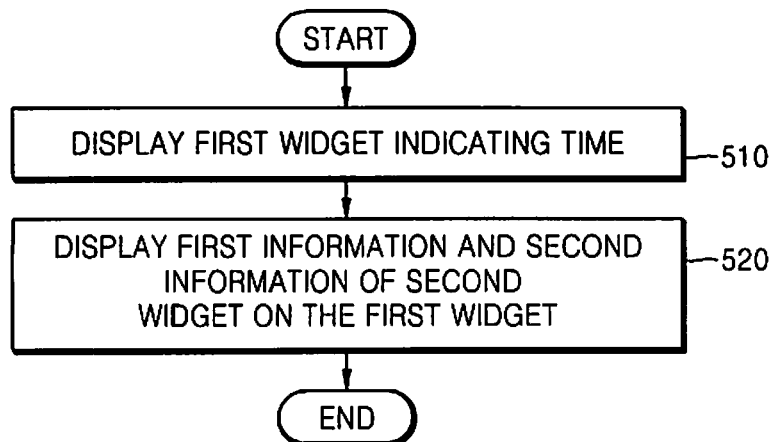
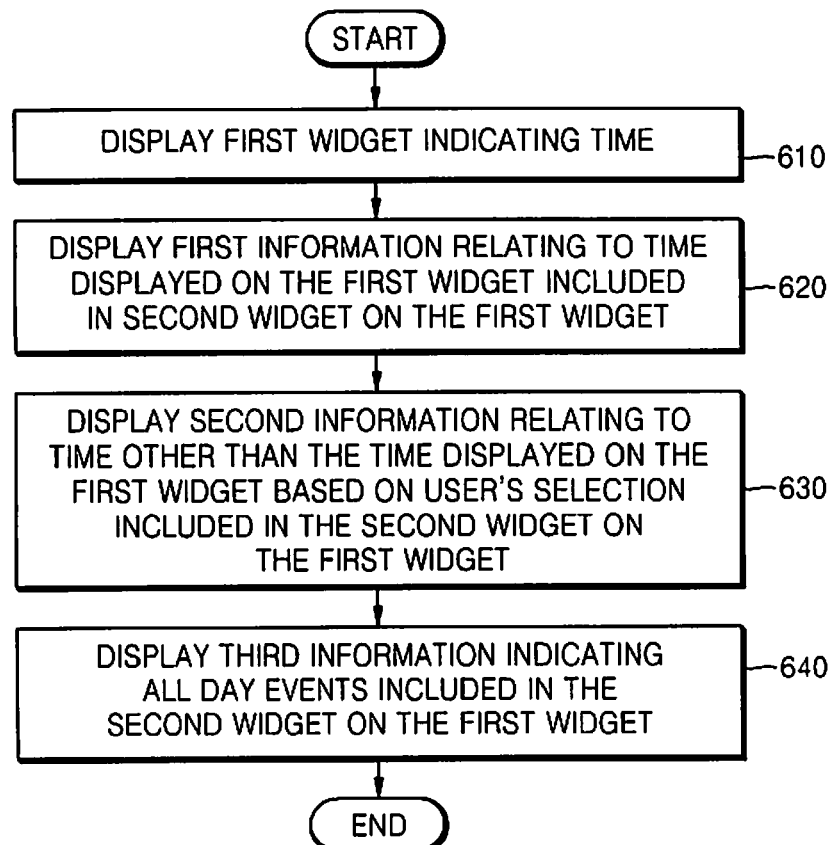


FIG. 6



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## METHOD AND APPARATUS FOR PROVIDING A WIDGET

### PRIORITY

This application claims priority to Korean Patent Application No. 10-2010-0013646, filed on Feb. 12, 2010, in the Korean Intellectual Property Office, the contents of which are incorporated herein by reference.

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

The present invention relates generally to a method and apparatus for providing a widget, and more particularly to, a method and apparatus for providing a synthesis widget combining a time widget and a widget having another concept.

#### 2. Description of the Related Art

A widget is a Graphical User Interface (GUI) that provides a user who interacts with an operating system or an application with a unique method. Currently, users of computers or portable devices such as mobile devices may use various widgets to easily access useful information such as time and weather. Current widgets are also configured to provide users with a piece of information in accordance with platforms.

However, there is a need for a synthesis widget combining a time widget and a widget of another concept.

### SUMMARY OF THE INVENTION

The present invention provides a synthesis widget capable of combining information of various widgets.

The present invention also provides a synthesis widget combining a widget having time or space concept and a widget having another function.

The present invention also provides a synthesis widget that provides a user with various services in synthesis of a widget having time or space concept that is most necessary for a lift and stock or weather.

The present invention also provides an interactive service in a simple widget form to provide a widget having time or space concept with a positioning information service.

According to an aspect of the present invention, there is provided a method of providing a widget, which includes displaying a first widget indicating time, and displaying first information indicating an attribute of a second widget and second information specifying the first information based on a user's selection on the first widget, wherein the second widget includes the first information and the second information.

According to another aspect of the present invention, there is provided a method of providing a widget, which includes displaying a first widget indicating time, and displaying first information of a second widget relating to time displayed on the first widget and second information relating to time different from the first information based on a user's selection on the first widget, wherein the second widget includes the first information and the second information.

According to another aspect of the present invention, there is provided an apparatus for providing a widget, which includes a display unit for displaying the widget, a storage unit for storing a first widget indicating time and a second widget, and a widget synthesis unit for displaying first information indicating an attribute of the second widget and second information specifying the first information based on a user's selection on the first widget.

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According to another aspect of the present invention, there is provided an apparatus for providing a widget, which includes a display unit for displaying the widget, a storage unit for storing a first widget indicating time and a second widget relating to time displayed on the first widget, and a widget synthesis unit for displaying first information relating to time displayed on the first widget and second information relating to time different from the first information based on a user's selection on the first widget.

### BRIEF DESCRIPTION OF THE DRAWINGS

The above and other features and advantages of the present invention will become more apparent by describing in detail embodiments thereof with reference to the attached drawings in which:

FIG. 1 illustrates an apparatus for providing a widget according to an embodiment of the present invention;

FIGS. 2A through 2D illustrate a widget that is a synthesis of a time widget and weather widgets according to an embodiment of the present invention;

FIGS. 3A through 3D illustrate a widget that is a synthesis of a time widget and stock widgets according to another embodiment of the present invention;

FIGS. 4A through 4D illustrate a widget that is a synthesis of a time widget and event widgets according to another embodiment of the present invention;

FIG. 5 illustrates a method of providing a widget, according to an embodiment of the present invention; and

FIG. 6 illustrates a method of providing a widget, according to another embodiment of the present invention.

### DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

Hereinafter, the present invention will be described in detail by explaining embodiments of the invention with reference to the attached drawings. Like reference numerals in the drawings denote like elements. In the following description of the present invention, a detailed description of known functions and configurations incorporated herein will be omitted for clarity and conciseness.

FIG. 1 illustrates an apparatus 100 for providing a widget according to an embodiment of the present invention. Referring to FIG. 1, the apparatus 100 includes a display unit 110, a storage unit 120, a widget synthesis unit 130, and a communication unit 140.

The display unit 110 displays the widget, and may include a touch screen (not shown) having a touch-detection surface sensor that receives an input from a user based on a haptic contact and/or a tactile contact.

The storage unit 120 stores a first widget showing time and a second widget that is related or unrelated to time. In an embodiment, the storage unit 120 may store a first widget including a clock icon showing time and a second widget relating to time displayed on the first widget. The first widget is referred to herein as a clock widget. The storage unit 120 may include a Read Only Memory (ROM) or a Random Access Memory (RAM), and include at least one magnetic disk storage device, a flash memory device, or a non-volatile memory such as a non-volatile solid-state memory device.

The widget synthesis unit 130 displays first information and second information included in the second widget on the first widget. The first information indicates an attribute of the second widget. The second information specifies the first information based on a user's selection. The widget synthesis unit 130 may display the first information on a clock icon of

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a clock widget that is a type of first widget. The first widget relates to time and is not limited to the clock widget. For example, the first widget may be a calendar widget.

The widget synthesis unit **130** may display the second information specifying the first information included in the second widget outside the clock icon according to the user's selection. For example, the second widget may be a time-related weather or stock widget. However, the second widget is not limited to a time-related widget. If the second widget is the time-related weather widget, the first information is weather information of current time, and the second information is selectable location information. If the second widget is the time-related stock widget, the first information is stock information of current time, and the second information is selectable stock. This will be described in more detail with reference to FIGS. 2A through 3D.

The communication unit **140** receives widget information from an external server through a communication network if the apparatus **100** for providing the widget is updated. The communication unit **140** may communicate with a cellular phone network, a wireless network such as Local Area Network (LAN) and/or a Metropolitan Area Network (MAN), Intranet, and/or the Internet or World Wide Web (WWW), and other devices through wireless communication. Such wireless communication includes GSM (Global System for Mobile Communications), EDGE (Enhanced Data GSM Environment), HSDPA (High-Speed Downlink Packet Access), W-CDMA (Wideband Code Division Multiple Access), CDMA (Code Division Multiple Access), TDMA (Time Division Multiple Access), Bluetooth, Wi-Fi (Wireless Fidelity) such as IEEE 802.11a, IEEE 802.11b, IEEE 802.11g and/or IEEE 802.11n, VoIP (Voice Over Internet Protocol), Wi-MAX, an e-mail protocol such as IMAP (Internet Message Access Protocol) and/or POP (Post Office Protocol), XMPP (eXtensible Messaging and Presence Protocol), SIMPLE (Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions) and/or IMPS (Instant Messaging and Presence Service), and/or instant messaging such as SMS (Short Message Service), or another suitable communication protocol that has not been developed at the time the present application was filed. However, the present invention is not limited thereto, and the wireless communication may use any one of a plurality of communication standards, protocols, and technologies.

FIGS. 2A through 2D illustrate widgets that are a synthesis of a time widget **210** and information **220** and **230** included in a weather widget (not shown) according to an embodiment of the present invention.

Referring to FIG. 2A, the widget **200a** is a synthesis of the time widget **210** and information **220** and **230** included in the weather widget. The time widget **210** illustrates a clock icon in an analog clock form, but may provide a clock icon in a digital clock form.

The information **220** included in the weather widget is displayed on the time widget **210**. In the present embodiment, the information **220** included in weather widget may be displayed on the time widget **210** as icon types. The icon **220** may be displayed on the clock icon of the time widget **210** as the icon **220** that is intuitive to weather. The icon **220** may include text or graphic information indicating a temperature. The icon **230** that sets a specific location is displayed outside the clock icon of the clock widget **210**. The icon **230** may display a change key **231** used to change such information as a previously set specific location, a specific location **232**, a recently updated time **233**, and an update icon **234**. A user may change the previously set specific location when activating the change key **231** through a finger tap, and may receive

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weather information regarding a current location from a server (not shown) that provides external weather information when activating the update icon **234** through the finger tap. The weather icon **220** shows weather of the specific location **232** at the recently updated time **233**.

In response to the activation of the weather icon **220** through the finger tap, a user interface that provides detailed weather information regarding a current specific location is displayed. Referring to FIG. 2B, the user interface **200b** that provides detailed weather information may display weather information regarding a plurality of dates, etc. Further, the user interface **200b** may display a change key **240** that changes such information as a specific location, a recently updated date, and an update icon.

In response to the activation of the icon **230** that sets the specific location through the finger tap, a user interface that sets the specific location is displayed. Referring to FIG. 2C, a user interface **200c** that sets the specific location displays a settable specific location **260**. For example, if the user selects a specific location such as Busan, the user interface **200c** displays a widget screen **200d** of FIG. 2D that is a synthesis of a widget regarding Busan weather and a clock widget.

FIGS. 3A through 3D illustrate a widget **300a** that is a synthesis of a time widget **310** and information **320** and **330** included in a stock widget (not shown) according to another embodiment of the present invention.

Referring to FIG. 3A, the widget **300a** is a synthesis of the time widget **310** and the information **320** and **330** included in stock widget. The time widget **310** illustrates a clock icon in an analog clock form, but may provide a clock icon in a digital clock form.

The information **320** included in the stock widget is displayed on the time widget **310** and may be displayed on the time widget **310** in a text format that is intuitive to stock. Further, the information **320** may present stock and rising/falling prices in colors or diagrams. The information **330** that sets a specific stock icon is displayed outside the clock icon of the clock widget **310** and includes such information as a change key **331** used to change a previously set stock items, a stock item **332**, a recently updated time **333**, and an update item **334**. A user may change a previously set specific location when activating the change key **331** through a finger tap, and may receive stock information regarding a current stock item from a server (not shown) that provides external stock information when activating the update icon **334** through the finger tap. The weather icon **320** shows stock information regarding the stock item **332** at the recently updated time **333**.

In response to the activation of the icon **320** through the finger tap of the user, a user interface that provides detailed stock information regarding a current stock item is displayed. Referring to FIG. 3B, a user interface **300b** that provides detailed stock information may display a change key **340** that changes such information as a stock item, a recently updated date, and an update icon.

In response to the activation of the information **330** that sets a specific stock item through the finger tap of the user, a user interface that sets the specific stock item is displayed. Referring to FIG. 3C, a user interface **300c** that sets the stock item displays a settable stock item **360**. The user interface **300c** may display such information as a recently updated date and an update icon. For example, if the user selects a specific stock item, such as NHN, the user interface **300c** displays a widget screen **300d** of FIG. 3D that is a synthesis of a stock widget regarding NHN and a clock widget.

The widget synthesis unit **130** may display the first information included in the second widget relating to time displayed on the first widget and the second information relating

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to time different from the first information based on a user's selection on the first widget. The widget synthesis unit **130** may display the first information that indicates the attribute of the second widget and is included in the second widget on the clock icon of the clock widget, and may display an icon that provides the second information relating to time other than time displayed on a clock icon included in the second widget based on the user's selection.

For example, the second widget may be an event widget, the first information may be event information relating to the time displayed on the clock icon, and the second information may be event information relating to time other than the time displayed on the clock icon. The widget synthesis unit **130** may display third information indicating all day events included in the second widget outside the clock icon.

FIGS. 4A through 4D illustrate a widget **400a** that is a synthesis of a time widget **410** and event widgets **420** and **430** according to another embodiment of the present invention.

Referring to FIG. 4A, the widget **400a** is a synthesis of the time widget **410** and information **420** and **430** included in the event widget. The time widget **410** illustrates a clock icon in an analog clock form, but may provide a clock icon in a digital clock form.

The information **420** and **430** included in event widget is displayed on the clock widget **410**. The information **420** relating to time displayed on a current clock icon may be time-sequentially displayed on a clock icon of the clock widget **410**. For example, a study event may be displayed on a clock icon corresponding to 06:00 am-09.20 a.m. The information **430** indicating all day events is displayed outside the clock icon of the clock widget **410**. The information **430** may display dates, days, and all day events.

In response to activation of the information **420** relating to time displayed on a current clock icon through a finger tap, a user interface that provides detailed event information regarding an event relating to the time displayed on a current clock icon is displayed. Referring to FIG. 4B, a user interface **400b** that provides detailed event information specifically displays event information, which may be prepared in a widget or displayed after being received from an event application.

In response to activation of the information **430** indicating all day events through the finger tap, a user interface that provides detailed all day event information is displayed. Referring to FIG. 4C, a user interface **400c** that provides detailed all day event information displays detailed all day event information **460**.

Further, an icon **440** that provides event information relating to time other than time displayed on a clock icon of the clock widget **410** may be displayed on a clock icon. For example, when a user selects the icon **440** indicating AM, a user interface that provides event information corresponding to PM is displayed. Referring to FIG. 4D, a user interface **400d** that provides the event information corresponding to PM specifically displays event information **470** and **480** corresponding to PM time. Similarly to FIG. 4A, the event information **470** and **480** may be time-sequentially displayed on the clock icon. As described above, when information is toggled and displayed, the information may be effectively displayed on a mobile display device having a limited screen.

FIG. 5 illustrates a method of providing a widget, according to an embodiment of the present invention. Referring to FIG. 5, in operation **510**, an apparatus for providing the widget displays a first widget indicating time, which first widget may include a clock icon.

In operation **520**, the apparatus for providing the widget displays first information and second information included in

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a second widget on the first widget. The first information indicates an attribute of the second widget. The second information specifies the first information based on a user's selection and may be related or unrelated to time. If the second widget is related to time, it may be displayed on the first widget. The apparatus for providing the widget displays the first information indicating the attribute of the second widget on the clock icon, and displays the second information specifying the first information outside the clock icon based on the user's selection.

For example, if the second widget is a weather widget, the first information may be weather information of a current time, and the second information may be selectable location information. If the second widget is a stock widget, the first information may be stock information of the current time, and the second information may be a selectable stock item. This was described in detail above, and thus a detailed description thereof will be omitted here for purposes of conciseness.

FIG. 6 illustrates a method of providing a widget, according to another embodiment of the present invention. Referring to FIG. 6, in operation **610**, an apparatus for providing the widget displays a first widget indicating time, which first widget may include a clock icon.

In operation **620**, the apparatus for providing the widget displays first information relating to time displayed on the first widget. The second widget includes the first information. If the first widget includes a clock icon, the apparatus for providing the widget may display the first information within the clock icon.

In operation **630**, the apparatus for providing the widget displays second information relating to time other than time displayed on the first widget based on a user's selection. The second widget includes the second information. If the first widget includes the clock icon, the apparatus for providing the widget may display the second information on a region other than the clock icon. If the first widget includes the clock icon and the second widget is an event widget, the first information is event information relating to time displayed on the clock icon, and the second information is event information relating to time other than the time displayed on the clock icon.

In operation **640**, the apparatus for providing the widget displays third information indicating all day events included in the second widget on the first widget. If the first widget includes the clock icon, the apparatus for providing the widget displays the third information outside the clock icon. This was described in detail above, and thus a detailed description thereof will be omitted here for purposes of conciseness.

The invention can also be embodied as computer-readable codes on a computer-readable recording medium. The computer-readable recording medium is any data storage device that can store data that can be thereafter read by a computer system. Examples of the computer-readable recording medium include ROM, RAM, CD-ROMs, magnetic tapes, floppy disks, and optical data storage devices. The computer-readable recording medium can also be distributed over network-coupled computer systems so that the computer-readable code is stored and executed in a distributed fashion. Also, functional programs, codes, and code segments for accomplishing the present invention can be easily construed by programmers of ordinary skill in the art to which the present invention pertains.

While the present invention has been particularly shown and described with reference to embodiments thereof, it will be understood by those of ordinary skill in the art that various changes in form and details may be made therein without

departing from the spirit and scope of the present invention as defined by the following claims.

What is claimed is:

1. A method of providing a synthesis widget including widgets having different respective attributes, the method comprising:

displaying, by a first widget, a first image representing first information;

displaying on the first image, by a second widget, a second image representing second information corresponding to the first information, wherein the second information of the second widget is synthesized with the first information of the first widget; and

displaying, along with the first image and the second image, by the second widget, a third image representing third information selected by a user from among a plurality of pieces of selectable information specifying the second information; and

displaying, by the second widget, a user interface for selecting the third information from among the plurality of pieces of selectable information, when the third image is selected by the user,

wherein the third image is displayed at a position other than a position where the first image is displayed.

2. The method of claim 1, wherein the first information includes time information, the third information includes location information, and the second information includes weather information corresponding to time displayed by the first widget and location selected by the user.

3. The method of claim 1, wherein the first information includes time information, the third information includes stock item information, and the second information includes stock information corresponding to time displayed by the first widget and stock item selected by the user.

4. The method of claim 1, further comprising displaying, by the second widget, a user interface that provides detailed information regarding the second information, when the second image is selected by the user.

5. An apparatus for providing a synthesis widget including widgets having different respective attributes, the apparatus comprising:

a display configured to display the synthesis widget;

a storage unit configured to store a first widget and a second widget; and

a widget synthesizer configured to display, by the first widget, a first image representing first information, display, on the first image, by the second widget, a second image representing second information corresponding to the first information, wherein the second information

of the second widget is synthesized with the first information of the first widget, display, along with the first image and the second image, by the second widget, a third image representing third information selected by a user from among a plurality of pieces of selectable information specifying the second information, and display, by the second widget, a user interface for selecting the third information from among the plurality of pieces of selectable information, when the third image is selected by the user,

wherein the third image is displayed at a position other than a position where the first image is displayed.

6. The apparatus of claim 5, wherein the first information includes time information, the third information includes location information, and the second information includes weather information corresponding to time displayed by the first widget and location selected by the user.

7. The apparatus of claim 5, wherein the first information includes time information, the third information includes stock information, and the second information includes stock information corresponding to time displayed by the first widget and stock item selected by the user.

8. The apparatus of claim 5, wherein the widget synthesizer displays, by the second widget, a user interface that provides detailed information regarding the second information, when the second image is selected by the user.

9. A non-transitory computer-readable recording medium having recorded thereon a computer program for executing a method of providing a synthesis widget including widgets having different respective attributes, the method comprising:

displaying, by a first widget, a first image representing first information;

displaying, on the first image, by a second widget, a second image representing second information corresponding to the first information, wherein the second information of the second widget is synthesized with the first information of the first widget; and

displaying, along with the first image and the second image, by the second widget, a third image representing third information selected by a user from among a plurality of pieces of selectable information specifying the second information; and

displaying, by the second widget, a user interface for selecting the third information from among the plurality of pieces of selectable information, when the third image is selected by the user,

wherein the third image is displayed at a position other than a position where the first image is displayed.

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